

Drug Administration for marketing in the United States as an anticonvulsant agent in adults. It has not yet received such approval for use in children. Nevertheless, it has been widely used in pediatric practice both in this country and abroad.

Carbamazepine is a tricyclic compound related to imipramine and unrelated structurally to other clinically utilized anticonvulsant agents. Most reports have indicated that carbamazepine is an effective anticonvulsant in grand mal, psychomotor and focal motor seizure disorders. Petit mal seizures are apparently not influenced by therapy with carbamazepine. The major adverse side effect reported has been bone marrow aplasia, but this is a very rare occurrence. Transient side effects often seen include dizziness, diplopia and blurred vision. Urticaria rashes have been noted.

Dosage levels range from 10 to 25 mg per kg of body weight per day in two to three divided doses. The drug is provided as a scored 200 mg tablet. Therapeutic blood levels commonly range from 5 to 15 mg per ml. Frequent complete blood counts are prudent. If the leukocyte count falls below 3,500 per cu mm, use of alternate drugs should be considered.

Carbamazepine is a major new addition to the therapeutic armamentarium of anticonvulsants. Because its sedative effects are less than those of phenobarbital and it does not cause the cosmetic problems phenytoin sodium (Dilantin®) does, it is likely to be used increasingly in the treatment of seizure disorders.

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## Laparoscopy in Infancy and Childhood

WITH THE DEVELOPMENT of the Hopkins quartz rod lens system, laparoscopy in infancy and childhood is now practical. The procedure requires general anesthesia with relaxation. The viewing telescope is introduced through the umbilicus, and the resulting scar is usually invisible.

Laparoscopy is most valuable for inspection and taking biopsy specimens of the liver. In addition,

if jaundice is present, a needle may be introduced through the liver into the gallbladder, and an operative cholangiogram done as described by Gans; in this way, laparotomy can be avoided and biliary atresia can be ruled out in cases of neonatal hepatitis.

Another frequent indication is lower abdominal pain in adolescent girls when the differential diagnosis includes ruptured ovarian follicle, ovarian cyst, salpingitis and appendicitis.

In cases of intersex it is possible to see and take biopsy specimens of the internal genitalia without the need for laparotomy.

Four series of laparoscopies in infants and children, totaling 167 cases, have been reported without complications.

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## Childhood Hypertension

HYPERTENSION IN CHILDREN and adolescents is a subject receiving increasing attention. Until recently, there was little information about the distribution of blood pressure levels in these age groups. However, under the auspices of the National Institutes of Health, blood pressure grids (akin to height and weight grids) have been developed, giving percentiles for the distribution of blood pressure in normal boys and girls 2 to 17 years old. Data for these grids were derived by auscultation in the right arm with appropriately sized blood pressure cuffs and with subjects in the sitting position. Throughout the entire age group the fourth phase or muffling sound was selected to represent diastolic pressures. The grids were developed from studies in more than 11,000 children and will soon be available for distribution.

The National Heart, Lung, and Blood Institute sponsored the Task Force on Pediatric Hypertension (Chairperson, Dr. Sidney Blumenthal) to review the state of the art and to make specific recommendations for health care professionals. The report was published as a supplement to *Pediatrics* in May 1977. Among its recommendations were the following: Blood pressure meas-

urements should be included in the physical examination of all children 3 years old and older as part of their continuing health care. These measurements should be plotted on grids. In a child in whom levels exceed the 95th percentile on four occasions, evaluations should be done taking into account the parents' history (hypertension or its complications), the health and blood pressure levels of siblings, the patient's history and findings on physical examination of the patient. Guidelines for pharmacotherapy in stepped graduations are provided.

Finally, the *Plan for Hypertension Control for the State of California*, adopted in 1976, includes a segment dealing with children and adolescents. Further information can be obtained from Dr. Harold Mozar, Chief, Chronic Disease Control Section, State of California Department of Health.

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## Hypothyroid Screening of Newborns

CONGENITAL HYPOTHYROIDISM probably is the most frequently occurring, preventable, congenital cause of mental retardation. Its incidence, about one in 5,000 births, is about twice that of phenylketonuria—which already is subject to mandatory newborn screening. Screening programs in North America have screened about 700,000 newborns and detected permanent congenital hypothyroidism in 166 of them; thyroid dysgenesis was found in 85 percent of the 166, inborn defects in thyroid hormonogenesis in 10 percent and hypothalamic-pituitary hypothyroidism in 5 percent. In only seven of the 166 infants was the condition suspected on clinical grounds before six weeks of age. Most of the screening programs now are testing filter paper blood spots (as used for phenylketonuria screening) for thyroxine content by radioimmunoassay and following this with a thyrotropin content radioimmunoassay on samples with the lowest 3 percent of thyroxine values. Infants with a low blood thyroxine level and a high thyrotropin level are recalled immediately for serum testing and treatment.

Infants with the lowest 1 percent of thyroxine values and low thyrotropin levels are retested at six weeks or the physician of record is notified of the low thyroxine and thyrotropin values—which may indicate prematurity, low serum thyroxine binding globulin level or hypothalamic-pituitary hypothyroidism.

Treatment of involved infants now is begun within four weeks of birth. Evaluation and preliminary IQ testing of treated newborns (after 12 months of treatment) suggests normal development. The cost of the program is \$1 to \$2 per infant screened, or \$5,000 to \$10,000 per infant in whom congenital hypothyroidism is detected. Without early diagnosis and treatment, special education is required in about 70 percent of hypothyroid infants at an estimated cost of \$30,000 per infant, and prolonged custodial care is required in 20 percent.

Newborn screening programs for congenital hypothyroidism, therefore, are effective in detection of the disorder and facilitation of early treatment, and are cost effective. Preliminary information suggests that early treatment prevents mental retardation and minimizes the impact of congenital hypothyroidism on public budgets for care and rehabilitation of the mentally handicapped.

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## The Lung Profile: Fetal Lung Maturity

FINDINGS FROM recent studies have shown that the maturity of the lungs in a fetus can be determined using various measurements of phospholipid indicators in amniotic fluid. These phospholipids originate from surfactant produced in fetal lungs and are secreted into amniotic fluid during gestation. They include lecithin and sphingomyelin (as the L/S ratio), the percentage of disaturated lecithin (which increases during gestation to 50 percent at maturation and as high as 70 percent at term), and percentages of two acidic phospholipids, phosphatidyl inositol and phosphatidyl glycerol. These latter two phospholipids